

PCT/IN99/0038

The Patent Act, 1970

REC'D 14 SEP 1999

WIPO

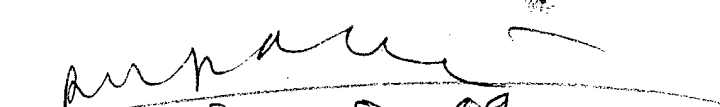
PCT

IT IS HEREBY CERTIFIED THAT, the annex is a true copy of application and Complete specification filed on 19.07.1999, in respect of Patent application No. 513/BOM/1999, of Shri ITALIYA RASIKLAL RAMJIBHAI, 93, Vallabhnagar Society, Varachha Road, Surat-395006, Gujarat, India.

This certificate is issued under the powers vested on me under section, 147(1) of the Patents Act, 1970.....

PRIORITY DOCUMENT
SUBMITTED OR TRANSMITTED IN
COMPLIANCE WITH
RULE 17.1(a) OR (b)

..... Dated this 17th August, 1999.

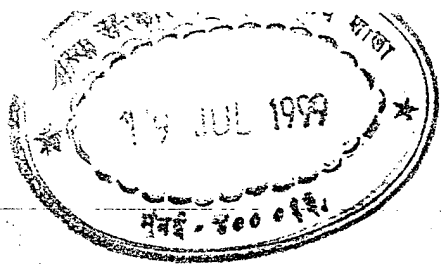

17-08-99

(R.V.PATEL)
Dy. Controller of Patents & Designs,
Mumbai-13.

As 14/P
19.07.99

FORM 1

THE PATENTS ACT, 1970
(39 of 1970)



APPLICATION FOR GRANT OF A PATENT

(See sections 5(2), 7, 54 and 135 and rule 33A)

ORIGINAL

1. Repeat the columns (a) to (c) if there are more than one applicant.

1. I/We, 1..

(a) 2 ITALIYA RASIKLAL RAMJI BHAT

(b) 3 93, Vallabh nagar sec

(c) 4 Vasachha Rd, SURAT-6 [GUJ]
INDIAN PEN: 395006

Passport No: - Q-769543

2. Insert the name in full. The family or principal name in the beginning if the applicant is a natural person.

(a) 2 _____

(b) 3 _____

(c) 4 _____

(a) 2 _____

(b) 3 _____

(c) 4 _____

3. Insert the complete address including postal index number/Code and State and/or Country

2. hereby declare -

(a) that I am/we are in possession of an invention titled Distillation of water in vacuum with complete recycle of latent heat of evaporation.

(b) that the Provisional/Complete Specification relating to this invention is filed with this application.

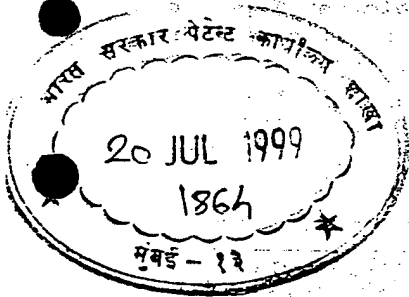
(c) that there is no lawful ground of objection to the grant of a patent to me/us.

5. Repeat the columns (a) to (c) if there are more than one inventor.

3. further declare that the inventor(s) for the said invention is/are .5

6. Insert the name in full. Family or principal name in the beginning.

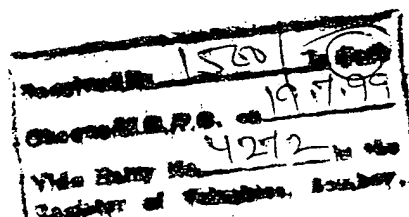
(a) 6 ITALIYA RASIKLAL RAMJI BHAT



513/Bom/99

19/7/99

12/1999



convention country with date.
Name of the natural person
should also be given
below the signature.

this invention or the applicant(s) in
the convention country declare that
the applicant(s) herein is/are my/our
assignee or legal representative
.20..

(a) 6, 13

(b) 7

(c) 8

).21.



10. That to the best of my/ our knowledge,
information and belief the fact and
matters stated herein are correct and
that there is no lawful ground
of objection to the grant of patent to
me/us on this application.

11. Followings are the attachment with
the application :

- (a) Provisional/Complete specification
(3 copies).
- (b) Drawings (3 copies).
- (c) Priority document(s).
- (d) Statement and Undertaking
on FORM-3.
- (e) Power of authority.
- (f)
- (g)
- (h)
- (i) Fee Rs. ... in cash/ cheque
/bank draft bearing No.....
date.....on..... Bank.

I/We request that a patent may be
granted to me/us for the said
invention.

22. To be signed by the applicant(s)
or if the applicant(s) is/are
absent, by an authorised patent
agent.

Dated this...day of 19.../20...

signature.22..

Shriya Ravi K
19/7/99

).23....

23. Name of the natural person
who has signed.

To
The Controller of Patents
The Patent Office,
at.....

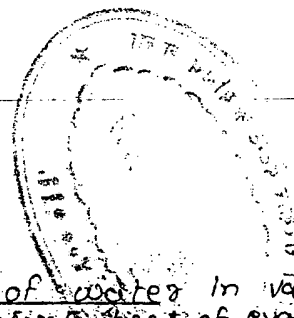
Note: (a) Strike out which ever is inapplicable.
(b) Fee: See the First Schedule.

- 1. Individual-Rs.1500/-
- 2. Legal Entity Rs. 5000/-

FORM 2

THE PATENTS ACT, 1970
(39 of 1970)

PROVISIONAL / COMPLETE SPECIFICATION
[See section 10.]



1. Title of the invention. 1. 1 Distillation of water in vacuum with complete recycle of latent heat of evaporation
2. Repeat the columns (a) to (c) if there are more than one applicant. 2. 2. (a) 3 ITALIYA RASIKUL RAMJISHAI
(b) 4 93, Vallabh nagor Society,
Vatarchha Rd, Surat - 395006
(c) 5 INDIAN Passport No.
G-769543
3. Insert the name in full.
The family or principal name in the beginning if the applicant is a natural person. (a) 3
(b) 4
(c) 5
4. Insert the complete address including postal index number/ code, State and country.
5. Insert the nationality.
6. Strike out in case of provisional specification.
7. Description of the invention.
8. Inapplicable in case of provisional specification.

The following specification (particularly) 6... describes 6... the nature of the invention and the manner in which it is to be performed. 6...

3. 7

4. I/We claim :- 8..

Dated this day of 19.. /20..

signature 9..

[Signature] 19/7/99

9. To be signed by the applicant or his authorised registered patent agent.
10. Name of the natural person who has signed.

11. (a) Not applicable in case of provisional specification.

(b) Separate sheet to be used for this column.

5. 11.. Abstract of the invention.

To
The Controller of Patents
The Patent Office,
at.....

Note : Strike out whichever is inapplicable.
(No Fee)

513. 1999

19 JUL 1999

ORIGINAL

Title of the Invention:-

(Distillation of water in vacuum with complete recycle of latent heat of evaporation)

This method is related to production of distilled water at low energy requirement from mixer or solution of water.

In the known method of production of distilled water lots of energy require due to high latent heat of water while production of steam and this energy is lost in condensation of steam.

The new compression methods of distilled water production also require additional external source of heat energy and more power for compression.

With keeping in mind that Condensation of steam gives back same quantity of heat energy that is required for boiling of same quantity of water, Latent heat of evaporation is completely recycle in this method

In this method two separate chambers with highly heat conductive common wall (4) is required. One chamber (2) is for solution of water (5) and Second chamber (1) is for collection of distilled water (6).

Both chamber is connected via compressor (3)

The function of compressor (3) is to reduce steam pressure from solution containing chamber (2) and increase the steam pressure in distilled water collecting chamber (1)

In both chambers air pressure is reduce up to partial pressure of steam at water temperature by any following method (e.g. total replacement of air with steam) which ever practically suitable.

- Introducing saturated steam above 100 degree Celsius for removing air completely from the chamber and replacing with steam and than seal both chamber form externally
- Filling completely both chamber with distilled water and then make empty both chamber through pump and seal the chambers.
- Filling completely both chamber with distilled water and then remove water with help of gravity pulling by vertical water column with other end under water seal to assure vacuum in both chamber.

After reducing steam presser up to partial presser of steam at water temperature, boiling point of the water will be at system temperature.

As compressor (-3) reduced further pressure of solution chamber (2), boiling-point of solution goes down below its temperature leading to boiling of water resulting in cooling of solution and common wall. On other side in distilled water chamber (1) increase steam pressure will lead to condensation of steam on cool common wall (4) of the chamber. Condensation of the steam gives latent heat energy to the wall and heat is transferred through the wall to solution of boiling chamber supplying energy for boiling. This continues heat energy transfer will reduce further reduction in temperature of boiling solution. Compressor maintain pressure difference across the both chamber by continues transferring steam from chamber (2) to chamber (1) This presser difference is directly proportional to rate of transfer of heat by common wall across the both chamber.

Design of the both chambers depend upon following factor

- Common wall is made up of highly heat conductive material and as thin as possible keeping in mind to resist difference of partial pressure across the both chambers to increase heat conductivity.
- Individual part of the wall is thick enough to resist vacuum created inside the both chambers.
- Increase the surface area of the common wall.

Compressor use in this method may be centrifugal, rotating, reciprocating.
Or whichever design is efficient to work at low pressure

Halima Rasikh
Date: 19/11/2019
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Energy efficiency this method is increase by following factors leading to decrease Pressure difference in both chamber and lower the energy requirement for operation of compressor.

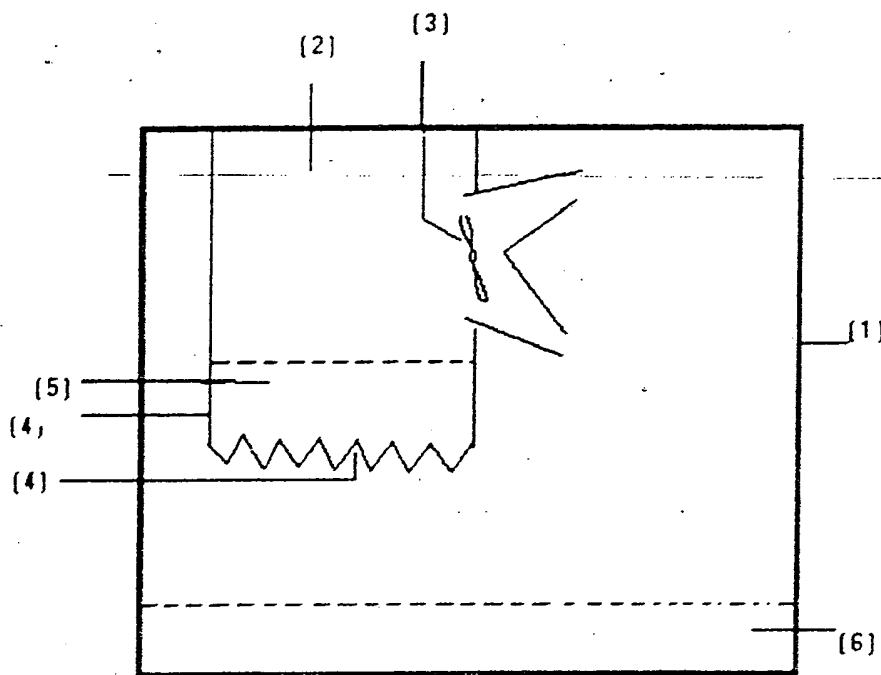
- Increasing heat conductivity of common wall.
- Increasing surface area of the common wall.
- Lowering impurity of steam from other gases in side chambers
- Lowering the pressure-temperature equilibrium of the system increase the efficiency.

My claim :-

1. Reduce the boiling point of the water by decreasing pressure will lead to increase the spectrum of latent heat over specific heat of water (In short increase latent heat of evaporation). So no heat energy is require for increasing temperature of water up to boiling point
2. Total recycling of latent heat of evaporation of water through condensation and boiling of water on opposite of the heat transferring common wall.
3. Total process is near about room temperature leading to no heat energy lost in environment.

Paty *Rasik*
Passport No:-
Q-769543
19/7/99

⑥ Drawing



Halima Parikh
Passport No:-
Q-769543
19/7/99

19 JUL 1999